# THE USE OF PHYSIOTHERAPY IN OBSTETRICS

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From the dawn of history until the beginning of the nineteenth century, the conduct of labour was commonly left to the care of unskilled women. Over this period of some three thousand years, the processes of labour remained shrouded in superstition and folklore, much of which still persists in today's "old wives' tales." The use of the term "labour pain" as a synonym for uterine contraction, still remains in our medical literature, hallowed by such a powerful authority as the Bible.

The medical renaissance of the eighteenth century brought much clear thinking to the problems of abnormal labour, and men such as William Smellie and his associates, struggling under the title of "male midwife" began to lay the foundations of modern obstetrical teachings.

In the nineteenth century, obstetrics was still regarded as the Cinderella of medicine, but gradually the importance of the specialty was recognised. Obstetric beds and departments were established in the larger teaching hospitals and finally university professors were appointed to teach medical students. The emphasis was still on abnormal labour and no attention was paid to antenatal care.

In the year 1853, chloroform was administered to Queen Victoria during the birth of her eighth child, and it gradually became popular for doctors to be present at confinements, if only to administer the blessed anaesthetic. So it came about that the medical profession became associated in the public mind with abnormal labour and with the relief of labour pains.

It was not until 1912, just 50 years ago, that the first public antenatal clinic for normal obstetric patients was opened. We are proud of the fact that it was the late Prof. J. C. Windeyer, for many years professor of Obstetrics at Sydney University, who established this clinic in Sydney at the Royal Hospital for Women, Paddington.

In the last 50 years we have largely eliminated maternal deaths from eclampsia, haemorrhage, obstructed labour and infection. And we are finally escaping from the burden of ignorance and superstition under which our grandmothers laboured to produce us. Those of us who have worked in close association with modern antenatal and physiotherapy clinics over the last 20 years have seen a great increase in the number of women having their babies in a seemingly effortless fashion with a minimum of pain and in many cases without the necessity for analgesic or anaesthetic drugs.

Physiotherapists must continue the inroads into obstetrical practice that have been made so successfully by their predecessors. Physiotherapy clinics should be set up in association with every maternity hospital in this country, and the physiotherapist must demand the right to be part of the team which delivers the baby in the labour ward and cares for the mother in the puerperium. The benefits of this service, for which I can personally vouch, are a high percentage of spontaneous labours with the avoidance of the risks of general anaesthesia, an enormous psychological advantage to the mother and the establishment of a more complete mother-child relationship. Finally a large amount of excellent teaching material is made available for our nurses and young doctors in the teaching hospitals.

In the preparation of patients for normal labour, I feel that there are two important aims. The first, and the most important, is mental relaxation (through knowledge and education), and the second, the ability voluntarily to relax the skeletal musculature.

The common anxieties of the pregnant woman are due mainly to ignorance, but occasionally to the profound effects of ill-advice given by some other person, a friend or female relative. These anxieties are mainly shown by fears—fear of an abnormal or mentally deficient child, fear that pregnancy will destroy her personal charm and her husband's love, fear that denying intercourse will lose her her husband and allowing it will damage the baby, fear of the responsibility of parenthood, and overshadowing all these, the fear of labour and the labour pains.

Pain in labour is felt in two places, in the lower abdomen and in the lower back. The lower abdominal pain is in the 10th, 11th and 12th thoracic segments anteriorly and its intensity is related to the degree of ischaemia in the uterine muscle at the time of the contraction. This ischaemia will be increased by high tone in the uterine muscle and by excessive retraction of its fibres. Sacral backache, when it occurs, is due to resistance to what should be a passive stretching of the lower uterine segment and the cervix. It can be said that the less a woman experiences backache in labour, the more efficient is her uterus.

Read's theory of natural childbirth is based on the assumption that the parasympathetic nervous system (nervus erigens) excites longitudinal muscle and inhibits circular muscle, whereas the sympathetic nervous system (through the hypogastric nerve) produces the opposite effects. He states that the effect of fear is to stimulate circular muscle through the sympathetic system and at the same time to inhibit expulsive contractions. The total effect is that labour progresses but slowly. The cervix fails to dilate because of spasm of its circular muscle. The mother suffers intense but fruitless pain which in its turn increases her fears so that a vicious cycle is established. It is only fair to say here that experimental evidence does not bear out Read's theories.

The following facts summarise our present knowledge of uterine action.

1. The uterus possesses the power of contraction apart from any extrinsic nerve supply.
2. The sympathetic nervous system is probably not motor to the human uterus, but is inhibitory to both circular and longitudinal fibres. It also contains sensory and vasoconstrictor fibres.
3. It is doubtful whether the parasympathetic nervous system contains any motor fibres to the uterus. It may contain sensory fibres.
4. Uterine action appears to be influenced by a hypothalamic centre.

Whatever the theories and mechanism, there is no doubt that the removal of fear from the mother's mind and tension from her body does largely abolish the pain of uterine contractions. Her individual fears must be sought out and explained away and her misconceptions corrected. Answers to her questions must be direct and truthful, building the confidence and trust essential for the correct application of the second principle of muscular relaxation.

Two main groups of muscles must be under perfect control, the abdominal muscles in the first stage and the pelvic and perineal muscles in the second stage. The benefits from relaxation of the abdominal muscles have recently been strikingly demonstrated by the development of a negative pressure apparatus. A framework covered by a plastic bag encases the abdomen, and at the onset of a uterine contraction, a negative pressure can be rapidly established over the abdominal wall by a powerful suction pump. The abdominal wall rises several inches by this induced relaxation, allowing the uterus to rise and the axis of the uterine body to point downwards and backwards, more directly into the pelvis. It also allows the uterus to assume a more circular cross-section instead of an oval one, which allows the contraction to be more mechanically efficient. An indirect effect is to increase the blood flow through the uterine muscle and the placenta, helping to prevent muscle ischaemia and foetal anoxia. This apparatus definitely relieves the pain of first stage uterine contractions and shortens the first stage of labour. A patient trained in relaxation procedures does the same thing and can expect similar beneficial results.

In the second stage of labour, relaxation of the levatores ani muscles and the superficial muscles of the perineum is necessary to allow the foetal head to descend onto the perineum and the perineum to project downwards some three inches over the advancing head. This projection is well shown in the Birth Atlas used in antenatal classes, and can be likened to two swinging doors opening in opposite directions, to allow the head with its diameter of 3¾ inches to emerge through the vulva. The anterior vaginal wall, with the urethra and bladder, moves upwards a small amount, and the posterior vaginal wall, covered by the perineal muscles, projects downwards a much greater distance. The two movements provide space for the emerging head, which is then born by a process of extension of the head on the neck. The ability of a mother to bear down with full confidence onto a relaxed perineum is a very real test of the effectiveness of antenatal training.

With full "crowning" of the head, the mother must hold the head at this point, with the perineal muscles fully relaxed, to allow the final stretching of the muscles, fascia and skin, which is necessary before the head can be delivered. Should a contraction occur at this stage she must not bear down, but must pant rapidly in and out through the mouth until the contraction has passed. Following the birth of the head the shoulders and body of the baby can be delivered with little difficulty by a similar process of bearing down onto a relaxed perineum, and at the end of the third stage of labour the placenta can easily be pushed out in like manner.

Finally, I would like to comment on a habit which persists in all our labour wards, and in all text books of obstetrics. This is the giving of an anaesthetic with the crowning of the head. The reasons given for this practice are that it will relieve the pain of delivery and prevent a contraction occurring which might tear the perineum. I have spoken to many women after delivery and they invariably say that this stage of labour is quite painless. The prolonged stretching produces almost complete anaesthesia in the vulval skin, and it is well known that, should it be necessary, an episiotomy can be done at this stage without the slightest pain. The second reason is also not tenable, for a contraction at this stage does not constitute a hazard.

What usually happens is that the mother is given either too little anaesthetic, which merely interferes with her co-operation, or she is given too much, and the anaesthetic goes on acting after the birth of the baby and interferes with the contractions which cause separation and expulsion of the placenta. This is a potent cause of post-partum haemorrhage.

I hope this brief resume will help in the better understanding of the process of birth, and that a crusade will be stimulated for a wider acceptance of these methods in obstetric hospitals.